

## Analysis of Firm Attributes and Tax Aggressiveness of Quoted Commercial Banks in Nigeria

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### ABSTRACT

The study examined the influence of firm attributes on tax aggressiveness of quoted Commercial Banks in Nigeria. It specifically evaluated how firm profitability, leverage, relate with tax aggressiveness in Nigerian banks. The study employed Ex-Post Facto research design. The sample size consist of an equal sample of the 13 listed Commercial Banks firms quoted on the Nigerian Stock Exchange. Secondary data was used for the study as extracted from the annual reports and financial statements of the selected banks for a nine-year period of 2012-2020. The panel data were analyzed using descriptive statistic, correlation and panel data regression technique which was dually estimated to capture the samples. The outcome of the Nigerian model showed that while profitability has significant positive relationships with tax aggressiveness, while firm leverage has insignificant positive relationships with tax aggressiveness. The study recommends, among others, that Considering that highly profitable firms were highly tax aggressive as shown in the Nigerian model, management should ensure that they install strong corporate governance mechanisms in order to guarantee that the intended gains from tax avoidance activities are not opportunistically misused by the managers.

**KEYWORDS:** Tax aggressiveness, Profitability, and Leverage

### INTRODUCTION

Tax is an important source of government revenue. Government requires tax revenue to augment its public expenditures as well as ensure sufficient provision of public amenities to society. Most developed nations such as the United Kingdom rely on taxation as a major source of government revenue, and they have fared better because taxes provide a more stable and predictable flow of income in meeting governments' expenditure needs (Ofoegbu, Akwu & Oliver, 2016). Unfortunately, not every national government, especially in developing countries, is able to effectively achieve an optimal tax compliance level. In many cases, a large proportion of the informal sector of the economy escapes the tax net entirely (Oladipupo & Obazee, 2016), while companies in the formal sector try to avoid taxes by engaging in tax planning activities in order to minimize their tax burden (Hutchens, Rego & Williams, 2019).

The Nigeria government, through the Federal Inland Revenue Service (FIRS), initiated and implemented the tax amnesty programme between 2017 and 2018 which offered a 12-month window of opportunity for corporate taxpayers to regularize their tax liabilities. Despite having existing general anti-avoidance rules (GAAR), recently published a proposed corporate tax amendment Bill, 2019, with a special focus on anti-tax avoidance measures. These are all efforts by both nations to widen their tax nets. However, available indices suggest that despite Nigeria having a higher corporate tax rate than South Africa (at 30% and 28% respectively), South Africa has a significantly higher tax-to-GDP ratio than Nigeria – with 29% in 2018 compared to Nigeria's 6.1% at the same period (Maiye & Isiadinso, 2018). Similarly, the preliminary evaluation of the 2020 annual financial reports of listed commercial banks in both countries showed that Nigerian commercial banks were marginally

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more tax aggressive than their South African counterparts with effective tax rates (ETR) of 13% and 14% respectively for year 2020. That aligned with the position of Onyali and Okafor (2018) conclusion that despite governments' efforts, companies engaged in tax aggressiveness policies by exploiting available loopholes in the tax law with the help of tax experts.

Most prior studies (Onyali & Okafor, 2018; Salihu, Annular & Sheikh Obid, 2013) opined that corporate tax aggressiveness was among the most severe tax compliance issue threatening the revenue generation of different nations around the world. In Africa, the two countries which constituted the major focus of this study (that is, Nigeria and South Africa) are considered the two largest economies with existing bilateral economic relations. Although the latter takes the lead, economically, because of her more capitalized economy with an advantage in infrastructure, science and technology, the former is considered the second largest economy in Africa owing to her status as the most populous black nation in the world (Umezurike & Asuelime, 2015). Since tax avoidance is an issue that is considered prevalent in every society where taxes are levied, howbeit in a different magnitude, both nations have several anti-avoidance tax laws geared towards discouraging tax aggressiveness among corporations. Therefore, this study investigates the impact of firm attributes on tax aggressiveness of quoted commercial banks in Nigeria. However, the specific objectives were:

1. To assess the impact of firm profitability (ROA) on tax aggressiveness of quoted commercial banks in Nigeria.
2. To investigate the impact of leverage on tax aggressiveness of quoted commercial banks in Nigeria.

## REVIEW OF RELATED LITERATURE

### Tax Aggressiveness

The term, corporate tax aggressiveness, lacks a universal definition as it might connote "different things to different people" (Hanlon & Heitzman, 2010). Given this, there have been several definitions of corporate tax aggressiveness put forward by researchers in recent times Hanlon and Heitzman (2010) described tax aggressiveness as a continuum of tax planning strategies where something like municipal bond investments were at one end (lower explicit tax, perfectly legal), then terms such as 'noncompliance', 'evasion', aggressiveness', and 'sheltering' would be closer to the other end of the continuum. The practice of tax aggressiveness along this continuum sets up an interesting and relevant agency dilemma (Lietz, 2013). Research shows that

some level of tax aggressiveness avoidance is desirable. If a firm pays less tax through legitimate tax saving strategies, shareholders benefit same way management benefits when incentives are properly aligned (Slemrod, 2004). Thus, the terms such as tax management, tax planning, tax sheltering and tax aggressiveness are interchangeably used with tax avoidance in the literature (Lanis & Richardson, 2012; Tang & Firth, 2011).

Rego (2003) defined tax aggressiveness as a reduction of the present value of tax payments. Thus, in a general sense, tax aggressiveness is a strategy of minimizing taxes. Effective tax avoidance seeks to minimize taxes but only to the extent that such planning maximizes after-tax returns (Scholes, Wolfson, Erickson, Maydew & Shevlin, 2009). In a broad sense, tax aggressiveness is a term that suggests a firm is avoiding taxes by all means and it may or may not include tax sheltering or tax evasion (Dyreg, Hanlon & Maydew, 2008). According to Kirchler and Maciejovsky (2001), tax avoidance as a concept is simply an attempt to reduce tax payments by legal means, for instance, by exploiting tax-loopholes

### Profitability

An intuitive indicator with the capacity to influence effective tax rate is firms' profitability. Specifically, when profitability is measured based on pre-tax income, it is expected that more profitable firms have higher earnings and, consequently, pay more taxes. This point of view is the one most evident in the literature (Ribeiro, Cerqueira & Brandão, 2015). An early study by Gupta and Newberry (2007) found that tax avoidance was associated with firms' profitability. Gupta and Newberry (2007) were among the first to investigate the association between GAAP ETRs and multiple firm-level characteristics. Multivariate results derived from micro-level panel data showed that ETRs were significantly associated with a number of other firms' characteristics besides size, for example, firm profitability. Profitability is commonly measured as either return on assets or cash flow from operations.

The basic argument is that more profitable firms arguably have a greater incentive to reduce their tax burden as compared to firms that are less profitable (Dunbar, Higgins, Phillips & Plesko, 2010). More profitable firms generally pay higher taxes. On the other hand, one could argue that more profitable firms have greater incentives to engage in tax avoidance due to the greater potential savings (Rego, 2003; Frank *et al.* 2009; McGuire, Omer & Wang, 2012). As well, Manzon and Plesko (2002) argued that more profitable firms could make better use of tax

deductions, exemptions and credits. Lisowsky (2010) showed that tax avoidance was positively associated with performance. Rego (2003) also asserted that firms with a higher pre-tax income had lower effective tax rates, *ceteris paribus*. Profitable companies may have a greater incentive than less-profitable companies to engage in tax planning (Rego, 2003) which should lead to lower effective rates. A positive association between firms' profitability and ETR was found by Richardson and Lanis (2007), Minick and Noga (2010), Armstrong *et al.* (2012), Delgado, Fernández-Rodríguez and Martínez-Arias (2018) and Aburajab, Maali, Jaradat and Alsharairi (2019) while Derashid and Zhang (2003) and Kraft (2014) documented a negative influence of firms' profitability on ETRs.

Dhaliwal, Huber, Lee and Pincus (2012) asserted that companies with net operating losses (NOL) had a little incentive to implement tax planning strategies that reduced effective rates and subsequently find a positive association between the existence of an NOL and effective tax rates. This relationship, however, can be complicated by a firm's position with regard to valuation allowances and current taxes payable. These complications may help to explain a negative association between NOLs and ETRs that was evidenced in other prior research (Dyrengr & Lindsey, 2009; Higgins, Omer & Phillips, 2011; Rego, 2003). Phillips (2003) and Dhaliwal *et al.* (2012) found a negative association between Book (that is, GAAP) ETR and ROA, which supported this assertion. However, Dyrengr *et al.* (2010) and Robinson, Sikes

### Leverage

Leverage may be representative of complex financing arrangements that minimize taxes (Mills, Erickson & Maydew, 1998). Leveraged firms using debt capital to finance their activities incur interest expenses that are as opposed to dividend payments, deductible from taxable income. Leveraged firms thus benefit from a tax shield as its value increases with financial leverage. Hence, firms with high debt levels may be faced with less pressure to draw on alternative non-debt tax shields (Graham & Tucker 2006). Alternatively, leverage might also measure the complexity of a firm's financial transactions, leading to the assumption that highly leveraged firms have greater ability to reduce taxes through the use of financing transactions (Mills, Erickson & Maydew, 1998). In sum, leveraged firms may either have a relatively strong incentive to avoid taxes so as to preserve cash to service the debt burden or a relatively weak motivation to engage in tax avoidance because of the beneficial debt tax shield (Badertscher, Katz, & Rego, 2011). Taylor and Richardson (2014)

found a negative association between tax avoidance in businesses and its debt level. Boussaidi and Hamed (2015) asserted that the debt would be proved as a stimulant since it reduced a company's tax burden by deducting interest because the effects of interest payments could be used as a tax deductible expense in determining corporate taxable income.

Harrington and Smith (2012) opined that tax avoidance positively influenced leverage in a general cross section of firms. Their study supported the notion that tax avoiders valued leverage as part of an overall tax avoidance strategy, and was robust to alternative definitions of leverage, methods of identifying tax avoidance and definitions of refinancing events. In addition, tax avoidance is positively associated with the likelihood of issuing debt capital as a method of refinancing projects.

Rego and Wilson (2012) found that firms with high leverage ratios were associated with lower Effective Tax Rates (ETRs), implying a higher tax avoidance. On the contrary, Wilson (2009) and Lisowsky (2010), in their studies on the use of corporate tax shelters, provided evidence that tax shelter firms were associated with lower leverage ratios. Based on a sample of firms that were shown to have participated in tax shelters, Wilson (2009) developed a profile of a firm that was most likely to use a tax shelter based on financial statement information. He included leverage as one of his explanatory variables in the tax shelter prediction model and documented a negative relationship with tax aggressiveness.

### Empirical Studies

Mihaela, Sergiu-Bogdan and Vasile (2021) examined the determinates of tax avoidance- evidence on profit paying companies in Romania companies for the period 2013-2017. Using a sample of 236 privately owned limited liability and stock companies with published financial statements in the Romanian Ministry of Public finance, the findings revealed that larger companies with lower financial performance and lower leverage ratio were more inclined towards tax avoidance. Also, the geographical region and the industry sector where the companies operated were among the factors that would determine their tax avoidant-behaviour.

Martinez, Brito and Chiachio (2020), in their study, verified the influence of corporate tax aggressiveness on replacing the Chief Executive officer- CEO of companies listed on the Brazilian Stock Exchange B3 from 2010 to 2016. Using the proxies: - Cash Effective Tax Rate and Long Run Effective Tax Rate for tax aggressiveness, their result showed significant low tax aggressiveness. It meant that less tax aggressive CEOs were more likely to be replaced. As



such, the findings reinforced tax planning as a determinant factor to remaining in the position. Akintoye, Adegbe and Onyeka-Iheme (2020) examined the impact of tax planning strategies on the profit performance of listed manufacturing companies in Nigeria. They used the Taro Yamani Formula in arriving at a sample of 46 manufacturing firms from 2008 to 2017. They made use of descriptive and inferential statistics in analyzing the secondary data. Their result showed that there was no significant effect of tax planning on the profitability (proxied using ROA) of manufacturing firms in Nigeria. Yahaya and Yusuf (2020) examined the impact of firm characteristics on tax aggressiveness in Nigerian listed insurance firms. They focused on firm size, firm age, profitability and leverage as independent variables and measures of firm characteristics. Their sample consisted of twenty (20) insurance firms quoted on the Nigerian Stock Exchange from 2010 to 2018. They did their analysis using the two-step system GMM panel regression model and found that firm size and leverage affected tax aggressiveness positively while firm age and profitability asserted negative significant impacts on tax aggressiveness.

In China, Chen, Ge, Louis and Zolotoy (2019) investigated the effect of liquidity on corporate tax avoidance. They documented that firms with higher liquidity engaged less in extreme (that is, either overly aggressive or overly conservative) tax avoidance. The effect of liquidity on tax avoidance was economically meaningful and robust across alternative measures of tax avoidance and stock liquidity. They further documented that the effect of liquidity on tax avoidance was amplified for firms with a high proportion of activist shareholders, and attenuated for firms with high levels of stock price informativeness. The entirety of the findings was consistent with the view that stock liquidity mitigated extreme tax avoidance by enhancing shareholders' control over firm management. John-Akamelu, Ifurueze and Iyidiobi (2018) investigated the effect of corporate tax aggressiveness on firm growth in Nigeria using the ex post facto research design. They made use of secondary data which comprised seven (7) quoted manufacturing companies (2007-2016). They did their analysis using the pooled OLS method and the influence of ETR on firm growth was not statistically significant and so, should be ignored as a key determinant of firm growth. They also found that leverage (LEV) impacted positively on firm growth, but the impact was not statistically significant. They however, recommended that the efficient use of tax rate to generate firm growth should be encouraged. Atu, Uniamikogbo and Atu (2018) examined the effect of firm attributes on tax aggressiveness in

Nigeria using secondary data which comprised fifteen (15) DMBs from 2013-2017. They deployed the use of the OLS regression technique. Their result showed that firm size, leverage and liquidity had significant impacts on tax aggressiveness in Nigeria while profitability had a non-significant impact on tax aggressiveness. They recommended that the initial focus of tax authorities should rather be on creating a tax culture among the people, and not on maximizing revenue or enforcing stringent tax compliance measures. Ugbogbo, Omoregie and Eguavoen (2018) evaluated the corporate determinants of aggressive tax avoidance in Nigeria from the dimension of firm-specific attributes. They used secondary data extracted from the annual reports of 40 Nigerian listed companies from year 2013 to 2017. With the aid of the OLS multiple regression technique, they found empirical evidence that firm size had a positive relationship with corporate tax aggressive avoidance while profitability and leverage had negative significant relationships with corporate tax aggressive avoidance. Rania, Susetyo and Fuadah (2018) set out to analyze the effects of corporate characteristics on tax avoidance and the effects of the moderation of earnings management on the relationship between corporate characteristics and tax avoidance. The corporate characteristics in the study were proxies for profitability, leverage and size. The study had 49 manufacturing companies listed on the Indonesian Stock Exchange from 2012-2016 as samples that were selected by using the cluster random sampling technique. The result of the panel data regression with random effect model showed that the characteristics of a company, namely, the profitability and size had a significant negative effect on tax avoidance, whereas the leverage had a significant positive effect on tax avoidance. Balakrishnan, Blouin and Guay (2017) examined the impact of tax aggressiveness on corporate transparency in United Kingdom. They used secondary data which comprised 40,193 firm-year observations that ran from 1990 to 2013 and were extracted from the Compustat database. They used GAAP-ETR tax aggressive measure in a multiple regression analysis technique and found out that aggressive tax planning was significantly associated with lower corporate transparency. They concluded that managers in tax aggressive firms attempted to mitigate those transparency problems by increasing various tax-related disclosures. As a result, firms faced a trade-off between tax benefits and financial transparency when choosing the aggressiveness of their tax planning. Ogbeide's (2017) study examined firm characteristics and tax aggressiveness of listed firms in Nigeria using pool and panel data for the period 2012 to 2016. The data

used were sourced from the annual reports of the selected firms. Both the panel and dynamic panel methods were used to analyse the data generated. The findings from the study revealed that firm size exerted positive and significant effects on tax aggressiveness. Leverage was significant and exerted a negative relationship with tax aggressiveness.

Ahmed and Mounira (2015), in their study, examined the effect of some governance mechanisms ( board size, gender diversity, quality of external auditor, managerial ownership and ownership concentration) on corporate tax aggressiveness based on the analysis of 39 Tunisian listed firms over the 2006- 2012 period. The regression results indicated that diversity in gender on corporate board, managerial ownership and ownership concentration had significant effects on firms' tax aggressiveness activities. Board diversity and managerial ownership exhibited a positive association with the effective tax rate thereby reducing tax aggressiveness while increases in concentration ownership tended to strengthen the tax aggressiveness of a company. However, the findings did not show any significant effects of corporate board size and external auditors' profile on tax aggressiveness.

Chashiandani and Martani (2012) examined the relationship between long-run tax avoidance behaviour and firm value by using a sample of non-banking and financial firms quoted on the Indonesian Stock Exchange between 2010 and 2011. The authors used a method similar to that employed by Dyreng Hanlon & Maydew (2008) who measured long-run tax avoidance and firm value, a proxy for Tobin's' q. They found that long-run tax avoidance had a significant negative relationship with firm value. The study suggested that firms with lower ETR had a higher firm value. In the same vein, Desai and Dharmapala (2009) found no direct relationship between tax planning and market performance. The reasons for this indirect and insignificant relationship were the complex nature and tax implications of the transactions. Hence, it became difficult for stakeholders to evaluate the performance of the firm fully. Rohaya, Nur Syazwani and Nor'Azam (2010) were of the opinion that larger companies endured higher effective tax rates (ETR) in their examination of Malaysian public companies listed on Bursa Malaysia. The conclusion was established during official assessment system and self-assessment system tax regimes. The study also concluded that lower ETRs were significantly related to highly leveraged companies, greater investment in fixed assets and lower investment in inventory. The results of the investigation by Abdul-Wahab and Holland

(2012) which sought to know the relationship between tax planning savings of firms and their value by utilizing the regression model was negative. Indeed, the relationship between firm value and tax planning activities from this perception meant that as tax planning activities increased, the tax costs and risks outweighed the benefits. On the other hand, Kawor and Kportorgbi (2014) found that tax savings enhanced after tax earnings of Ghanaian firms but did not reflect in the firm's value. The result was consistent with the agency theory notion that not all management strategies tended towards the achievement of wealth maximization objectives. In a similar vein, the adoption of the Generalized Least Squares (GLS) regression model by Ftouhi, Ayed & Zemzem (2014) to examine the relationship between firms' value and tax planning with firm size, leverage, capital intensity, dividend and earnings management as control variables found a significant and negative relationship. Ana, Antonio and Elisio (2015) investigated the determinants of effective tax rates: firms' characteristics and corporate governance using 45 publicly-listed Porto corporate groups over the 2010–2013 period. The study employed the Ordinary Least Squares (OLS) regression and found a positive relationship between profitability and effective tax rates. The study stated that firms with high profitability were most likely to engage in tax avoidance practices in order to reduce their tax liabilities. Lanis, Richardson and Taylor (2015) specifically examined the relationship between corporate tax avoidance and the liquidity of a firm. The sample consisted of 200 publicly listed Australian firms over the period 2006-2010. The Ordinary Least Squares (OLS) regression model was used in the study as the basis of analysis. The result showed that liquidity was significantly and positively related with tax avoidance.

Mosota (2014) examined the relationship between firm size and tax aggressiveness. The period of the study was 2008-2013 and it used 61 listed companies on the Nairobi Stock Exchange. The study used Ordinary Least Square (OLS) regression Model. The result revealed that a positive relationship existed between firm size and tax aggressiveness. Akanksha, Jayant and Costanza (2013) examined the impact of corporate tax aggressiveness and the role of debt in the U.S.A. The study's sample consisted of 9,648 unique firms over the 1986-2012 period. The impact of leverage on tax aggressiveness was tested using the U.S model's predictions. The findings showed that leverage deterred tax aggressiveness. It was also evident that although leverage reduced tax aggressiveness in absolute value, it exacerbated it when the latter was measured as a proportion of the

firm's pre-tax book income. It was consistent with the hypothesis that leverage could actually cause the manager to avoid more taxes in the non-bankrupt states of the world when the perceived benefits therefrom were positive.

In addition, Wilson (2009) developed a profile of the type of company that was probably engaged in corporate tax avoidance by using a set of companies which were identified by several press articles and tax court records as having participated in corporate tax shelters. He found that tax shelter firms were associated with larger differences among their book value and tax value, firm size, the existence of foreign income, and aggressive financial reporting. Mastuki and Bardai (2008) studied a sample of 294 large Malaysian companies (1470 firm-years) for year 2000 to 2004. They found that real estate, trading and services and construction companies had higher ETRs, and lower ETRs were associated with highly leveraged companies and those with greater investments in fixed assets and extensive foreign operations.

The only study among the log that sampled the Nigerian banking sector was that by Atu *et al* (2018) but the variables used were limited to firm size, profitability, liquidity and leverage excluding institutional ownership, firm complexity and firm age which were proposed in this present study. Also, among available published studies, the researcher was not aware of any published research which used firm complexity as an independent variable among the firm attribute determinants of tax aggressiveness. Therefore, this study intended to fill those gaps in literature by investigating the impact of firm attributes on tax aggressiveness as it related to firm size, profitability, leverage, liquidity, institutional ownership, firm complexity and firm age (to be controlled by auditor type) in Nigerian firms with special reference to the Nigerian banking sector. It further analyzed comparatively with the South African banking sector.

## METHODOLOGY

### Research Design

The study employed *Ex-post Facto* research design because it involves the evaluation of the behaviour of the same variables over an extended period of time.

### Population and Sample Size of the Study

The population of the study comprised all listed financial companies in Nigeria as at year ended December 2020,

Considering the limited number of commercial banks in both countries and the need to adopt an equal sample size for the purpose of the comparative

analysis, the census sampling method was employed in choosing the entire thirteen (13) commercial banks in Nigeria as the benchmark sample size, as shown in Table 1 below.

**Table 1: Sample Size**

s/n	Nigeria
1.	Access Bank
2.	Eco Bank
3.	Fidelity Bank
4.	First Bank Holding
5.	First City Monument Bank
6.	Guaranty Trust Bank
7.	Stanbic Ibtch Holding
8.	Sterling Bank
9.	Union Bank Of Nig
10.	United Bank For Africa
11.	Unity Bank
12.	Wema Bank
13.	Zenith Bank

**Source: Researcher's compilation (2021)**

### Methods and Sources of Data

Secondary data was gathered from several yearly reports of the sampled commercial banks, which were placed in libraries and on the NSE's website ([www.nse.com.ng](http://www.nse.com.ng)). The study spanned nine (9) years of financial data (2012-2020). The estimates were made over a nine-year period in order to use data from the same accounting reporting framework (IFRS) – notably since Nigeria embraced IFRS in 2012.

### Model Specification

The model was functionally expressed as:

Tax Aggressiveness =  $f$  (profitability and leverage,).....;i

Introducing the control variable, we had:

Tax Aggressiveness =  $f$  (profitability, leverage).....ii

The general econometric model for the study was specified thus;

$BTD_{it} = \alpha + \beta_1 ROA_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$  .....iii

Where;

BTD = Discretionary (Total) Book Tax Difference, proxy for tax aggressiveness.

ROA = Return on Assets; measured as the ratio of profit after tax to total asset.

LEV = Leverage measured as the ratio of total debt to total equity.

$\alpha$  = constant.

$\beta_1$  to  $\beta_2$  = the coefficient of the parameter estimate.

$\varepsilon$  = the error term or residual.

i = ith firm for cross-section

t = time period



The model for the Nigerian banks was given as:

$$BTD_{itNGA} = \alpha + \beta_1 ROA_{itNGA} + \beta_2 LEV_{itNGA} + \varepsilon_{itNGA} \dots \dots \dots iv$$

Where; NGA = Country code for Nigeria

Model for the South African banks was given as:

$$BTD_{itRSA} = \alpha_0 + \beta_1 ROA_{itRSA} + \beta_2 LEV_{itRSA} + \varepsilon_{itRSA} \dots \dots \dots v)$$

Where; RSA = Country code for the Republic of South Africa

## RESULTS AND DISCUSSION

### Univariate Analyses

**Table 2: Descriptive Statistics**

NIGERIA	D_BTD	ROA	LEV	BIG4
Mean	-1.01E-18	0.0156	1.0112	0.9316
Median	0.00173	0.0129	0.8770	1.0000
Maximum	0.03554	0.0562	7.9925	1.0000
Minimum	-0.17957	-0.0953	0.4471	0.0000
Std. Dev.	0.02195	0.0179	0.7202	0.2535
Skewness	-5.79377	-2.1650	8.1262	-3.420
Kurtosis	44.9409	16.204	77.249	12.699
Jarque-Bera	9229.90	941.33	28162.9	686.66
Probability	0.00000	0.0000	0.00000	0.0000
Observations	117	117	117	117

Source: Eviews 10 (2021)

From Table 2, it could be observed that the mean values of the tax aggressiveness proxy (D\_BTD) stood at -1.01E-18 samples firms. Considering that the scientific notation of -1.01E-18 represented eighteen decimal points, it then meant that the average D\_BTD of the sample (-1.01E-18). It implied that the Nigerian banks were more tax aggressive. According to Prawira (2017), unlike the ETR tax aggressive measures, the bigger the BTD, the bigger the company was tax aggressive.

On the performance of the companies in terms of return on assets (ROA), it could be deduced that while the Nigerian banks had an average ROA value of 0.016. It showed that within the 9-year period covered by the study, the Nigerian banks (on average) made profits on their investments. However, the standard deviation of 0.018 was an indication that the ROA of majority of the sampled banks revolved around the mean value of 0.016, suggested that the ROA of some of the banks were way higher than the negative mean values obtained. Conversely, the mean values of LEV (measured by debt-to-asset ratio) showed 1.0112 for Nigerian banks which implied that, on average, the Nigerian banks (taken together) owned similar amount of liabilities as their assets.

**Table 3: Correlation Matrix**

Covariance Analysis: Ordinary				
Date: 05/27/21 Time: 22:00				
Sample: 2012 2020				
Included observations: 117				
Correlation				
Probability	D_BTD	ROA	LEV2	BIG4
D_BTD	1.000000			
	0.9705			
ROA	0.815916	1.000000		
	0.0000	-----		
LEV2	-0.122688	-0.196871	1.000000	
	0.1876	0.0334	-----	
BIG4	0.490552	0.379746	-0.256155	1.000000
	0.0000	0.0000	0.0053	-----

Source: Eviews10 Output (2021) NOTE: The p-values are in parentheses ( ); the significant correlation coefficients are marked with asterisks (\*)

The outcome of the correlation matrix was presented in Table 3. In the first part which focused on the Nigerian sample, the measures of leverage (LEV). On the other hand, the variables ROA, and BIG4 had positive associations with D\_BT D measure of tax aggressiveness. It meant that they all moved in the same direction with D\_BT D and were all statistically significant at the 1% level (p-values < 0.01). positively associated with ROA and Big4 which implied that large Nigerian banks were associated with higher profitability and liquidity, and they also employed more Big4 audit firms.

### Test of Hypotheses

Dependent Variable: D_BT D				
Method: Panel Least Squares				
Date: 05/27/21 Time: 21:37				
Sample: 2012 2020				
Periods included: 9				
Cross-sections included: 13				
Total panel (balanced) observations: 117				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.004809	0.034851	-0.137998	0.8905
ROA	0.980333	0.076615	12.79557	0.0000
LEV	0.002090	0.001646	1.270256	0.2067
BIG4	0.021603	0.005606	3.853618	0.0002
R-squared	0.725318	Mean dependent var		-9.34E-19
Adjusted R-squared	0.704971	S.D. dependent var		0.021953
S.E. of regression	0.011924	Akaike info criterion		-5.946705
Sum squared resid	0.015356	Schwarz criterion		-5.734230
Log likelihood	356.8823	Hannan-Quinn criter.		-5.860443
F-statistic	35.64766	Durbin-Watson stat		2.097384
Prob(F-statistic)	0.000000			

### Hypothesis 1:

**H<sub>01</sub>:** There is no significant relationship between firm profitability and tax aggressiveness in Nigerian banks.

The third hypothesis stated that no significant relationship existed between firm profitability and tax aggressiveness in Nigerian (H<sub>01</sub>) banks. Going by the outcome of model, ROA had a positive coefficient of 0.980 (p-value=0.000). It meant that, in both models, ROA was statistically significant at the 1% level of confidence. Thus, there was sufficient evidence for the rejection of null hypothesis. It therefore, meant that a significant relationship existed between firm profitability and tax aggressiveness in Nigerian banks.

### Hypothesis 2:

**H<sub>02</sub>:** The level of leverage does not significantly influence tax aggressiveness in Nigerian banks.

The study stated in the fourth hypothesis that there was no significant relationship between firm leverage and tax aggressiveness in Nigerian banks. From the outcome of model, the variable of LEV had a positive coefficient of 0.0021 (p-value =0.207). Since the p-values of LEV were far greater than 5%, the null hypotheses could not be rejected. It meant that there was no significant relationship between leverage and tax aggressiveness in Nigerian banks.

### Discussion, Conclusion and Recommendations

In addition, the test of the first hypothesis revealed that company profitability in Nigeria had a positive coefficient sign. It may be deduced from the computed coefficient signs and statistical significance that highly profitable Nigerian banks had greater D\_BT D (that is, were tax aggressive). The Nigerian result was consistent with the study's expectations and the school of thinking that more profitable enterprises had higher incentives to minimize their tax burden than less profitable firms due to the greater potential savings (Rego, 2003; Ribeiro et al., 2015). This explains why most major prosperous firms frequently engage in large-scale philanthropy and disaster management to establish relevance and obtain government tax breaks. One of the theories behind the D\_BT D measure of tax aggressiveness is that highly profitable corporations are more inclined to engage in earnings management for tax planning purposes in order to decrease their tax burden (Dunbar et al, 2010). The results of most previous studies, such as those by Zhu et al (2019), Rani et al (2018), and Chytis et al, showed that profitable enterprises were related with higher tax aggression (2018).

From the result and testing of the second hypothesis, it could be observed that the null hypothesis which stated that leverage had no significant relationship



with tax aggressiveness in Nigeria ] could not be rejected due to the high probability values obtained by the variable of leverage in the model. However, despite the non-significance of the variable of leverage, the positive coefficient obtained in model was expected as the study projected that highly leveraged firms would most likely have strong incentives to avoid taxes so as to preserve cash to service their debt burden. That position tallied with the position held by Rego and Wilson (2012). However, the non-significance of the result could be explained by the postulation that firms with high debt levels could be faced with less pressure to draw on alternative non-debt tax shields and were more likely to benefit from administrative tax shields. The results of most prior Nigerian studies such as those by Ifurueze *et al* (2018), Ilaboya *et al* (2017), Salawu and Adedeji (2018), Onyali and Okafor (2018) and Atu *et al* (2018) also found that leverage was non-significant in explaining variations in tax aggressiveness using varying samples of companies in Nigeria.

## Recommendations

In view of the findings and conclusions drawn from the results of the study, the following recommendations were proffered by the study:

1. Considering that highly profitable firms were highly tax aggressive as shown in the Nigerian model, management should ensure that they install strong corporate governance mechanisms in order to guarantee that the intended gains from tax avoidance activities are not opportunistically misused by the managers.
2. Since there were indications, although not statistically significant, that leveraged firms in both countries could likely have strong incentives to avoid taxes so as to preserve cash to service their debt burden, the study therefore recommended that tax authorities should draw up appropriate tax holiday policies that would allow genuinely struggling banks to emerge from distress position without resorting to aggressive tax avoidance measures.

